

Appl. No. 10/627,061
Amtd. dated May 16, 2005
Reply to Office Action of February 14, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-64. (canceled).

65. (previously presented) An absorbent structure having an upper surface, the absorbent structure comprising:

a) a water-swellable, water-insoluble polymer having acidic functional groups, wherein the water-swellable, water-insoluble polymer has at least about 50 molar percent of the acidic functional groups in free acid form; and

b) a polymeric basic material that is not water-swellable and water-insoluble; wherein the absorbent structure exhibits a Wicking Capacity value that is at least about 5 grams per gram of absorbent structure and exhibits a pH on the upper surface that remains within the range of about 3 to about 8.

66. (previously presented) The absorbent structure of claim 65 wherein the polymeric basic material comprises polyamine, polyimine, polyamide, chitin, chitosan, polyquaternary ammonium, polyasparagine, polyglutamine, polylysine, polyarginine, and mixtures thereof.

67. (previously presented) The absorbent structure of claim 65 wherein the acidic water-swellable, water-insoluble polymer has a pKa between about 2 and about 10.

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68. (previously presented) The absorbent structure of claim 65 wherein the acidic water-swellable, water-insoluble polymer has at least about 70 molar percent of the acidic functional groups in free acid form.

69. (previously presented) An absorbent structure having an upper surface, the absorbent structure comprising:

a) a water-swellable, water-insoluble polymer having acidic functional groups, wherein the water-swellable, water-insoluble polymer has at least about 50 molar percent of the acidic functional groups in free acid form; and

b) a non-polymeric basic material;

wherein the absorbent structure exhibits a Wicking Capacity value that is at least about 5 grams per gram of absorbent structure and exhibits a pH on the upper surface that remains within the range of about 3 to about 8.

70. (currently amended) The absorbent structure of claim 69 wherein the non-polymeric basic material comprises an organic salt, an aliphatic amine, an aromatic amine, an aliphatic imine, an aromatic imine, an aliphatic amide, an aromatic amide, a metallic oxide, a hydroxide, an inorganic salt, [[and]] or mixtures thereof.

71. (previously presented) The absorbent structure of claim 69 wherein the basic material is sodium citrate.

72. (previously presented) The absorbent structure of claim 69 wherein the basic material is sodium carbonate, sodium bicarbonate, or calcium carbonate.

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73. (previously presented) The absorbent structure of claim 69 wherein the acidic water-swellable, water-insoluble polymer has a pKa between about 2 and about 10.

74. (previously presented) The absorbent structure of claim 69 wherein the acidic water-swellable, water-insoluble polymer has at least about 70 molar percent of the acidic functional groups in free acid form.

75. (previously presented) The absorbent structure of claim 65 or 69 wherein the acidic water-swellable, water-insoluble polymer is prepared from a base comprising polyacrylamide, polyvinyl alcohol, ethylene maleic anhydride copolymer, polyvinylether, polyacrylic acid, polyvinylpyrrolidone, polyvinylmorpholine, carboxymethyl cellulose, carboxymethyl starch, hydroxypropyl cellulose, algin, alginate, carrageenan, acrylic grafted starch, acrylic grafted cellulose, polyaspartic acid, polyglutamic acid, and copolymers thereof.

76. (currently amended) The absorbent structure of claim 65 or 69 wherein the acidic water-swellable, water-insoluble polymer comprises carboxyl groups, sulfonic groups, sulphate groups, sulfite groups, phosphate groups, [[and]] or combinations thereof.

77. (previously presented) The absorbent structure of Claim 75 wherein the acidic water-swellable, water-insoluble polymer and the basic material are present in the absorbent structure in a molar ratio from about 10:1 to about 1:10.

78. (previously presented) The absorbent structure of Claim 75 wherein the absorbent structure exhibits a Wicking Capacity value that is at least about 10 grams per gram of absorbent structure.

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79. (previously presented) The absorbent structure of Claim 75 wherein the absorbent structure exhibits a pH on the upper surface that remains within the range of about 4 to about 7.

80. (canceled).

81. (previously presented) An absorbent structure having an upper surface, the absorbent structure comprising:

a) a water-swellable, water-insoluble polymer having basic functional groups, wherein the water-swellable, water-insoluble polymer has at least about 50 molar percent of the basic functional groups in free base form; and

b) a polymeric acidic material that is not water-swellable and water-insoluble; wherein the absorbent structure exhibits a Wicking Capacity value that is at least about 5 grams per gram of absorbent structure and exhibits a pH on the upper surface that remains within the range of about 3 to about 8.

82. (previously presented) The absorbent structure of claim 81 wherein the polymeric, acidic material comprises polyacrylic acid, polymaleic acid, carboxymethyl cellulose, alginic acid, polyaspartic acid, polyglutamic acid, and mixtures thereof.

83. (previously presented) The absorbent structure of claim 81 wherein the basic water-swellable, water-insoluble polymer has a pKa between about 4 and about 12.

84. (previously presented) The absorbent structure of claim 81 wherein the basic water-swellable, water-insoluble polymer has at least about 70 molar percent of the basic functional groups in free base form.

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85. (previously presented) An absorbent structure having an upper surface, the absorbent structure comprising:

a) a water-swellable, water-insoluble polymer having basic functional groups, wherein the water-swellable, water-insoluble polymer has at least about 50 molar percent of the basic functional groups in free base form; and

b) a non-polymeric acidic material;

wherein the absorbent structure exhibits a Wicking Capacity value that is at least about 5 grams per gram of absorbent structure and exhibits a pH on the upper surface that remains within the range of about 3 to about 8.

86. (previously presented) The absorbent structure of claim 85 wherein the non-polymeric acidic material comprises an aliphatic acid, an aromatic acid, citric acid, glutamic acid, aspartic acid, an inorganic acid, an aluminum oxide, a salt, iron chloride, calcium chloride, zinc chloride, and mixtures thereof.

87. (previously presented) The absorbent structure of claim 85 wherein the basic water-swellable, water-insoluble polymer has a pKa between about 4 and about 12.

88. (previously presented) The absorbent structure of claim 85 wherein the basic water-swellable, water-insoluble polymer has at least about 70 molar percent of the basic functional groups in free base form.

89. (previously presented) The absorbent structure of claim 85 wherein the basic water-swellable, water-insoluble polymer is prepared from a base polymer comprising polyamine, polyethyleneimine, polyacrylamide, polydiallyl dimethyl ammonium hydroxide,

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polyquaternary ammonium, chitin, chitosan, polyasparagine, polyglutamine, polylysine, polyarginine, and copolymers thereof.

90. (previously presented) The absorbent structure of claim 85 wherein the basic water-swellable, water-insoluble polymer and the acidic material are present in the absorbent structure in a molar ratio from about 10:1 to about 1:10.

91. (previously presented) The absorbent structure of claim 85 wherein the absorbent structure exhibits a Wicking Capacity value that is at least about 10 grams per gram of absorbent structure.

92. (previously presented) The absorbent structure of claim 85 wherein the absorbent structure exhibits a pH on the upper surface that remains within the range of about 4 to about 7.

93. (canceled).

94. (new) The absorbent structure of claim 65 further comprising a liquid-permeable topsheet and a backsheet attached to the topsheet, wherein the absorbent structure is positioned between the liquid-permeable topsheet and the backsheet.

95. (new) The absorbent structure of claim 69 further comprising a liquid-permeable topsheet and a backsheet attached to the topsheet, wherein the absorbent structure is positioned between the liquid-permeable topsheet and the backsheet.

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96. (new) The absorbent structure of claim 81 further comprising a liquid-permeable topsheet and a backsheet attached to the topsheet, wherein the absorbent structure is positioned between the liquid-permeable topsheet and the backsheet.

97. (new) The absorbent structure of claim 85 further comprising a liquid-permeable topsheet and a backsheet attached to the topsheet, wherein the absorbent structure is positioned between the liquid-permeable topsheet and the backsheet.